

EXECUTIVE SUMMARY

Issues and Actions from 1984 - 1990

On January 1, 1984, the state of Missouri implemented a decentralized motor vehicle “Inspection & Maintenance” (I/M) program in the St. Louis metropolitan area (St. Louis City and St. Charles, St. Louis, and Jefferson counties). This action became necessary due to the federal Clean Air Act (CAA) that required states designated as nonattainment to implement either “basic” or “enhanced” vehicle emissions testing I/M programs. The type of program implemented was determined based upon the severity of the problem and the size of the affected population. Missouri opted for a “basic” program because it had been designated as “moderate” for ozone nonattainment. The “basic” program was implemented by individual privately owned vehicle repair shops. The program was jointly administered by the Missouri State Highway Patrol and the Missouri Department of Natural Resources.

The United States Environmental Protection Agency (EPA) conducted its first audit of the I/M program in 1985. The EPA determined that the state’s efforts were not achieving minimum required Volatile Organic Compounds (VOC) emission reductions necessary for an acceptable I/M program. EPA conducted a second audit in 1987. Again, the findings reflected that the state’s efforts were still not meeting sufficient reductions in VOC. The program continued to exhibit low failure rates, an unrepresentative reporting on the tampering rate, and an excessive waiver rate. These conditions meant that the I/M program was not meeting emission reduction rates required by the Minimum Emission Reduction Requirement (MERR) standards.

The two audit findings required that Missouri prepare a corrective action plan (CAP) to correct the deficiencies. At the time of the audits a single speed idle tailpipe emissions test was being used which was ineffective for 1981 and newer vehicles. Missouri’s CAP, sent to EPA in December 1990, was to implement a BAR90 program. The BAR90 vehicle emissions testing method used a computerized analyzer, resulting in more accurate readings.

Issues and Actions from 1991 – 1994

The EPA conducted an audit of the new BAR90 program in August of 1992. Once again the EPA determined that Missouri’s efforts were still not meeting sufficient reductions in VOC emissions pursuant to MERR for a basic program. Remedial discussions between EPA and Missouri led to the conclusion that a decentralized BAR90 vehicle emissions testing program was inadequate for the state’s needs.

State’s that fail to meet MERR, even after implementing corrective action plans, are required to submit a State Implementation Plan (SIP). The SIP must detail, pursuant to 40 CFR 51.372(a)(1) – (a)(8), how deficiencies will be corrected. These include, but are not limited to: 1)

Implementation schedule, 2) Analysis of emission level targets using the most recent EPA mobile source emission model, 3) A description of the geographic coverage of the program, including ZIP codes, 4) Legal authority for the program, and 5) Evidence of adequate funding and resources to implement all aspects of the program.

These talks culminated in the decision to switch from a decentralized single speed idle tailpipe test to a centralized test-only enhanced test. However, Missouri law did not allow for an enhanced centralized test-only vehicle emissions program. Therefore, the department pursued legislation in 1994 to authorize the implementation of an enhanced vehicle emissions testing program in the St. Louis nonattainment area.

On May 13, 1994, the legislature passed Senate Bill 590, authorizing a centralized test-only enhanced I/M program. The enacting legislation, Sections 643.300 to 643.355, RSMo are known collectively as the “Air Quality Attainment Act” and were a direct result of the federal Clean Air Act. The Missouri Air Conservation Commission (MACC) adopted the necessary rules to make this program a reality. Missouri was required to come into compliance with the air quality health standards of the Clean Air Act for ozone by the end of 1996.

The deadline was not met and an extension was granted. There were multiple legal challenges brought by the Missouri General Assembly against the EPA and the State of Missouri regarding the authority of both the Federal and State government to require such a program. Efforts made to meet the state legislature’s desires for a hybrid “decentralized” program delayed awarding a contract for more than one year as emission testing vendors failed to submit bids because the goal of 32 testing stations was not economically feasible for them.

Issues and Actions from 1995 – 1999

The Missouri Department of Natural Resources submitted a revised SIP to EPA in 1995. This revision included the 15 percent rate of progress plan (ROP) and the submission of additional documentation in support of the SIP. During this same year the legislature deleted funding for the I/M program. As a result of that action the EPA on March 18, 1996, informed Missouri that it was contemplating disapproving Missouri’s I/M SIP because the SIP no longer complied with EPA’s I/M rule.

During the 1997 legislative session the Missouri legislature restored funding for the I/M program. The Missouri Department of Natural Resources submitted a revised SIP to EPA on August 5, 1997, to reflect that the state was now in compliance with EPA rules regarding adequate tools and resources. As further evidence of compliance with EPA I/M rules the state released a Request for Proposal (RFP) October 26, 1998, seeking bidders to implement an enhanced I/M program.

In February 1999, a contract was signed with Environmental Systems Products (ESP) to test vehicles in Missouri. ESP is the nation’s largest and most experienced vehicle emissions testing contractor, testing over 15 million cars a year in North America alone. ESP also operates internationally, in countries such as in China and Canada.

ESP built 12 new state-of-art vehicle emissions testing stations throughout the nonattainment area, including Franklin County. The locations were sought to maximize citizen convenience as defined by state statute and required in the contract with the State.

Issues and Action from 2000 - Present

The Gateway Clean Air Program (GCAP) vehicle testing network became operational in April, 2000. The affected areas were: St Louis City, St Louis, St. Charles and Jefferson counties, areas declared to be “nonattainment” by the EPA, pursuant to the federal Clean Air Act, as amended, 42 U.S.C. 7401, et. seq.

On opening day, April 5, 2000, GCAP stations tested 1,399 vehicles. ESP also was using “Rapid Screen” technology, allowing vehicles to be screened as clean as they are being driven on the road. This part of the program started in February 2000, and by opening day thousands of motorists had received notices stating that their vehicles had passed the emissions test without having to visit a testing station.

The state elected to use a two-year IM240 phase-in cut-point method to give the public a chance to become accustomed to the new test procedure, the method of measuring exhaust emissions

and the repair requirements. As with anything new, there was initial public distrust of the GCAP because the motoring public was used to having their local mechanic perform their vehicle emissions test, usually at the same time their vehicle was given a safety inspection.

The use of on-board diagnostics (OBD) testing was a part of the original GCAP design. The original OBD testing design complied with EPA regulations finalized in 1998. These regulations called for the use of OBD testing no later than January 1, 2001, for 1996 and newer model year vehicles. As a result of EPA's evaluation of various OBD testing and repair issues, EPA promulgated a new OBD rule on April 5, 2001. This rulemaking gave states the option to delay OBD testing until January 1, 2002. It also gave states the flexibility to further postpone OBD testing until no later than January 1, 2005. Because the GCAP was a relatively new program, the state decided to take advantage of the additional flexibility offered by the EPA.

In March 2002, the MACC held a public hearing regarding Missouri's OBD testing plan. The plan called for a one-year delay of OBD testing until January 1, 2003, and a two-year phase-in of OBD testing until January 1, 2005. In April 2002, the MACC adopted this plan, and the department submitted this plan to the EPA for approval as a SIP revision. In July 2002, the MACC held a public hearing regarding revisions to state rule 10 CSR 10-5.380. This rule amendment included Missouri's OBD testing plan adopted in April 2002. In August 2002, the MACC adopted the rule amendment, and the department submitted this rule to the EPA for approval as an additional SIP revision. Both of these SIP revisions were approved by the EPA on May 12, 2003, the same day that the St. Louis area was redesignated as a maintenance area for the one-hour ozone standard.

Missouri's Inspection and Maintenance Program

A. Applicability

Motor vehicles subject to Inspection and Maintenance (I/M) emissions inspections reside in the St. Louis one-hour ozone maintenance area or are primarily operated in this area. The maintenance area consists of St. Louis City and the Counties of St. Louis, St. Charles, Jefferson, and Franklin.

1. The portion of the St. Louis ozone maintenance area covered by the enhanced I/M element includes the counties of Jefferson, St. Charles, St. Louis and the City of St. Louis. The portion of the St. Louis ozone maintenance area covered by the basic I/M program is Franklin County.

2. **Census Population of the I/M Area**

County	Population 1990	Population 2000
Franklin	80,603	93,807
Jefferson	171,380	198,099
St. Charles	212,907	283,883
St. Louis	993,529	1,016,315
St. Louis City	396,685	348,189

Census information based on U.S. Census Bureau records.

Total 1990 census population of the enhanced I/M area: 1,774,501.

Total 1990 census population of the basic I/M area: 80,603.

Total 2000 census population of the enhanced I/M area: 1,846,486.

Total 2000 census population of the basic I/M area: 93,807.

3. A list of zip code areas covered by the I/M program is included in Attachment 10.

B. I/M Legislation and Regulations

The department is authorized to conduct the enhanced I/M program by statutes passed in 1994. The department has promulgated rules, which specify the requirements for the enhanced I/M program. State statutes and rules have been amended since 1994.

1. The State of Missouri implemented an enhanced motor vehicle I/M program in a portion of the St. Louis ozone nonattainment area starting April 5, 2000. Legal authority for the program was first provided by the 1994 General Assembly in the "Air Quality Attainment Act" (sections 643.300 - 643.355, RSMo). The Act was amended in 1998 to allow reformulated gasoline to be sold in the entire St. Louis ozone nonattainment area. Section 643.350, RSMo was also amended in 1999 in which the \$5 wait time penalty was removed. A copy of this act is included in this document as Attachment 1.

A copy of the Missouri rule (10 CSR 10-5.380) which specifies the details of Missouri's enhanced I/M program is included in Attachment 2. The rule was amended in 1999 to include a clean screen program, two-speed idle cut-points and On-Board Diagnostics (OBD) evaluation requirements.

Additionally, an emergency rule amendment was filed on November 30, 1999, effective January 1, 2000, that allowed for a transitional period for an emission extension sticker that temporarily delayed the emission inspection requirement for up to six months. This was necessary because the vehicle emissions testing program did not start until April 5, 2000, which meant that even model year vehicles, whose registration expired in January, February or March 2000, were unable to be emissions tested. The follow-up rule amendment, which incorporated the changes contained in the emergency rule, was filed December 1, 1999, with an effective date of July 30, 2000. This amendment also eliminated the \$5 wait time penalty. Additionally, this rule allowed for Franklin County residents to have their vehicles biennially tested by bringing their vehicles to any of the stations in the enhanced area.

The most current rule amendment was filed May 15, 2002, with an effective date of December 30, 2002. The substantive part of the rule increased the waiver amount for 1971 to 1980 model year vehicles from \$75 to \$200. Model year cars after 1980 must spend a minimum of \$450 to receive a waiver. Before any model year car can receive a waiver, in addition to spending the required minimum repair amount, must show a decrease in the failing pollutant(s), while not failing in another pollutant(s), after repair. OBD II pass/fail testing becomes mandatory in January 2005, for 1996 and newer vehicles. This amendment also initiated the OBD II phase-in starting in January 2003, for 1996 and newer vehicles. During OBD II phase-in, 1996 and newer vehicles which fail the OBD II test can be tested using the IM240 method. If the vehicle fails that test, the owner has the option to either repair it to OBD II standards or IM240 standards.

The contract for operating the I/M program requires that forty percent (40%) of the motor vehicles be exempted from a station based test. This includes the statutory exemption for the most recent two model years, which varies with model years and is usually in the range of twelve percent (12%). The first two (2) model year vehicles do not have to pay an emission fee. At least twenty percent (20%) of the motor vehicles must be exempted using RapidScreen remote sensing clean screening methods. The remainder, or about eight percent (8%), may be exempted through the use of additional model year exemptions, more RapidScreen remote sensing exemptions or a hybrid exemption method using both RapidScreen and a low emitter indexing system. Any motor vehicle that is exempted using one of the RapidScreen clean screen methods will have to pay an emission fee in order to receive a clean screen certificate that will be needed for motor vehicle registration.

2. The State of Missouri has implemented a basic motor vehicle I/M program in Franklin County. Section 307.366, RSMo provides the legal authority for this basic I/M program. The statute was amended in 1999 to give the residents of

Franklin County the option of an annual basic emission or biennial enhanced emission inspection test and registration cycle. A copy of this statute is included in this document along with the enhanced I/M statutes as Attachment 1. A copy of the Missouri rules (11 CSR 50-2 and 10 CSR10-5.375) which specify the 1999 changes to Missouri's basic I/M program is included as Attachment 2B.

3. State regulations specify that the geographic boundaries of the program in each county of the nonattainment area are countywide.

C. I/M Performance Standard for the Enhanced and Basic Program

The department uses the EPA approved models to evaluate the I/M program described herein for emission reduction effectiveness.

1. Attachment 6 contains the input and output files for MOBILE6. This model was used to estimate the emission reduction benefits of implementing an enhanced I/M program in the St. Louis nonattainment area.
2. The enhanced I/M program will meet or exceed the enhanced I/M performance standard beyond the year 2002. After the complete implementation of all program elements, the Missouri Department of Natural Resources (MDNR) will demonstrate that the program meets the relevant performance standards. Additionally, the I/M program design criteria will be documented relative to the performance standards.
3. Attachment 7 includes a description of the calculations used for the modeling.

D. Network Type and Program Evaluation

Both St. Louis ozone nonattainment area I/M programs are contractor operated. The emission test stations are operated by a single contractor, Environmental Systems Products (ESP) Missouri Inc. The contractor only conducts emission tests. No repairs or diagnosing of motor vehicles are allowed at the emission test stations.

1. The enhanced I/M program is a centralized, test-only centralized, test-only system operated by the State's contractor, ESP Missouri Inc. Vehicles in St. Louis City, and the counties of St. Louis, St. Charles and Jefferson included in the emission reduction demonstration discussed in section C and required to comply with the I/M program are tested biennially by the contractor at centralized test-only I/M emission test stations. The contract specifies, as does state law, that the emission test stations shall be test-only emission test and shall not offer motor vehicle emissions repairs, parts or services of any kind. No person operating or employed by an emissions inspection station shall repair, diagnose or maintain motor vehicle emission systems or pollution control devices for compensation of any kind (section 643.310, RSMo).
2. The basic I/M program is a centralized, test-only system. Vehicles in Franklin County are included in the emission reduction demonstration discussed in section C and required to comply with the I/M program are tested annually by the

contractor at centralized test-only I/M emission test stations. The contract specifies that the emission test stations shall be test-only and shall not offer motor vehicle emissions repairs, parts or services of any kind. No person operating or employed by an emissions inspection station shall repair, diagnose or maintain motor vehicle emission systems or pollution control devices for compensation of any kind.

Per section 307.366 RSMo, the residents of Franklin County have the option to get either a basic, annual emission test or an enhanced biennial emission test. If a resident decides to opt for an enhanced biennial emission test they must take the vehicle to one of the four counties where the enhanced I/M program is being operated.

3. MDNR has developed an evaluation methodology consistent with the EPA regulations. The procedures includes the following steps:
 - a. MDNR representatives overtly visit each I/M emission inspection lane, at least twice per year. They audit the test lane components, the mechanical, such as the dynamometer, the analytical, such as the laboratory grade gas spectrographs, and the electronic, such as the On-Board Diagnostic connection connector. They audit the record keeping and observe inspectors performing the emission tests on vehicles submitted for testing by the general public.
 - b. MDNR representatives covertly audit each I/M station inspector at least once per year. Every month of the year there are covert audits. Vehicles are chosen randomly and are tested at different times during the day. During covert audits, MDNR staff not only check for adherence to test practices and procedural requirements by the contractor, but also record the results of the observation and emission inspection.
 - c. The program evaluation report uses the MOBILE 6 model to compare the GCAP with the Basic I/M Performance Standard (the requirement for moderate ozone nonattainment areas) and the Enhanced I/M Performance Standard (the design goal of the GCAP). The program evaluation report also converts all station and clean screening data into full-length IM240 test data and then calculates the aggregate fleet reductions over a two-year test cycle. This report provides EPA, the General Assembly, and the public with an accurate evaluation of the benefits of the GCAP, and an evaluation of its contribution to St. Louis air quality improvements.
4. The results of the ongoing quality assurance program and the program evaluations are incorporated into the annual report. The annual report will meet the requirements of 40 CFR 51.366, described in Section Q. The first annual report was submitted to EPA two (2) years after the date of program implementation, with subsequent annual reports submitted July 1, of each subsequent calendar year.

E. Adequate Tools and Resources

The contractor and state expenses are recovered with test fees, or the fee to motorists for the I/M inspection. The state's portion of the fee is appropriated by the Missouri General Assembly for

state costs for I/M oversight staff and their workspace and equipment.

1. The Enhanced Test I/M Program is funded through a per vehicle inspection fee authorized by the General Assembly. The fee is \$24 as set by the Missouri Air Conservation Commission (section 643.350, RSMo 1998). The inspection fee is reduced for motorists who wait longer than thirty (30) minutes before the inspection begins (subsection 1 of section 643.350, RSMo Supp. 1998). See Attachment 4, the contract language, for the wait time penalty fee reduction breakdown. The contractor is required by contract to remit \$2.50 per motor vehicle inspection fee collected, to a State Treasurers' account on a weekly basis as established by the Air Conservation Commission (10 CSR 10-5.380). The Director of Revenue deposits the fees received in the state treasury to the credit of the "Missouri Air Emission Reduction Fund." Moneys in the fund are, subject to appropriation and expended for the administration and enforcement of the "Air Quality Attainment Act" by MDNR (subsection 5 of section 643.350, RSMo).
2. The Basic Test I/M Program is funded through a per vehicle inspection fee authorized by the General Assembly. The fee cap has been set by statute at \$10.50 for each basic emission inspection performed. The contractor is required by law to remit \$0.75 of the per motor vehicle fee to a State Treasurer's account within the time period established. The State's portion of the fee is deposited in the "Missouri Air Pollution Control Fund." Moneys in the fund are subject to appropriation and expended for the administration and enforcement of the basic I/M program in Franklin County by MDNR.
3. Attachment 5 includes a copy of a portion of House Bill 6 (Budget Bill) showing I/M program appropriations for state fiscal year 2000 and a budget for the program. MDNR will maintain I/M staffing levels to adequately cover overt and covert auditing, data collection and analysis, report preparation, performance monitoring, technical assistance, consumer assistance, waiver oversight, administrative and clerical functions. The Personnel Service Summary table located on the following page outlines the positions allocated for the I/M program.
4. MDNR has a budget for vehicles to be used for covert auditing; MDNR also maintains a rotating fleet of other department vehicles to maintain covert operation integrity. The MDNR budget also specifies the supply of necessary equipment and calibration pollutant(s) to be used in the quality control audits. The contractor supplies all other equipment or equivalent services, including but not limited to test equipment, test facilities, and computer equipment capable of data processing, analysis, and reporting. MDNR has complete access to the contractor's computer system to allow MDNR staff to analyze data and conduct other necessary data related functions. See Attachment 4 of the contract for specifics.

Personal Service Summary

Environmental Specialist IV	2.0 FTE	Chief for I/M unit. Supervises all APCP I/M staff and field staff.
Environmental Specialist III	1.0 FTE	Supervision of technical positions, technical assistance and consumer education/assistance.
Environmental Specialist I/II	8.0 FTE	Overt and covert station audits, performance monitoring, technical assistance, and consumer education/assistance and waiver oversight.
Computer Information Technology Specialist	1.0 FTE	Technical support for hardware and software dedicated to I/M, database development, general DP management of dedicated I/M data system.
Management Analyst I	1.0 FTE	Recording, tracking and analyzing fee revenues and expenditures, budget and sub-grant development/tracking.
Motor Vehicle Mechanic	2.0 FTE	Preparing vehicles for covert audits and conducting covert audits of vehicle repair facilities.
Environmental Engineer I/II	1.0 FTE	Check equipment specifications for the contract/operation oversight
Planner II	1.0 FTE	Contract development, oversight data, and fiscal control.
Clerk Typist II	2.0 FTE	Clerical support for technical staff, management, and research analysts.
Public Information Specialist I	1.0 FTE	Coordinate public information strategies and implementation between the contractor(s) and the state.
Environmental Engineer III	1.0 FTE	Supervise the field staff who will do the field audits of emission test stations and repair facilities.
TOTAL	21.0 FTE	

F. Test Frequency and Convenience

Enhanced emissions I/M tests are required biennially. Basic emissions tests performed in Franklin County are required annually, although Franklin County residents have the option to choose test type and frequency as previously detailed. Motorist convenience is assured by both state law and the contract provision regarding station accessibility, clean screening, and the wait time penalty that applies to the enhanced I/M stations.

1. Enhanced Test I/M Program

Test frequency is biennial for all subject vehicles in the enhanced test area. For new vehicles, which have an odometer reading of less than six thousand miles at the time of original sale, the model year dictates when the first emissions inspection is required. For even (odd) model year new vehicles originally sold in an even (odd) calendar year, the first emissions inspection is required for the second registration renewal which corresponds to two years after initial titling and registration. For even (odd) model year new vehicles originally sold in an odd (even) calendar year, the first emissions inspection is required for the first registration renewal which corresponds to three years after initial titling and registration.

For example, if a 2000 model year vehicle is sold in 1999, the first emissions inspection is required for re-registration in the calendar year 2002. This provision facilitates the implementation that even model year vehicles will be tested in even calendar years and odd model year vehicles will be tested in odd calendar years, and biennially thereafter (subsection 1 of section 643.315, RSMo and 10 CSR 10-5.380).

Newly purchased used vehicles or those requiring a title transfer are required to be emission inspected and certified prior to being registered in a new owner's name. Thereafter, they are required to be inspected biennially such that even model year vehicles will be tested in even calendar years and odd model year vehicles will be tested in odd calendar years. Statutory and regulatory authority is contained in sections 643.300 to 643.355, RSMo (Attachment 1) and 10 CSR 10-5.380 (Attachment 2).

Vehicles that are newly registered in the program area from other states or from other parts of the state must be inspected according to the odd-odd or even-even cycle.

2. Basic Test I/M Program

Emission testing frequency may be either annual or biennial for any subject vehicle in the basic test I/M program. The residents of Franklin County may choose either inspection cycle. If they choose the biennial cycle, they must have their motor vehicle inspected in a inspection station located in Jefferson, St. Charles, St. Louis County or St. Louis City and then are subject to inspection requirements of those counties.

3. The contract language in Attachment 4 and the statute in Attachment 1 contain provisions relating to motorist convenience that specify the location of enhanced I/M stations and waiting times for motorists at enhanced I/M stations. The locations are determined on the basis of proximity to the largest number of motorists possible. Provisions in the enhanced test program provide a monetary reduction of the inspection fee for exceedance of maximum waiting times by patrons. Standard hours of operation are set based on the contract as per language in Attachment 4. The enhanced I/M program operates a minimum of sixty-six (66) hours per week, Monday through Saturday, as required by law. The basic I/M program operates at least forty (40) hours per week, as required by law.

G. Vehicle Fleet Coverage

Subject vehicles or motor vehicles that are subject to the emission test program are motor vehicles that are domiciled or primarily operated in the St. Louis ozone nonattainment area; including those that are part of private or governmental fleets; all gasoline-fueled light duty vehicles except motorcycles (cars, pickup trucks, vans, sport utility vehicles) of model years 1971 and newer. Vehicles over 8,500 pounds gross vehicle weight rating, vehicles of the latest two (2) model years, and vehicles fueled exclusively with diesel fuel, propane, natural pollutant(s), electricity or other alternate fuels are exempt from emission inspection requirements.

1. Enhanced Test I/M Program

- a. All 1971 and later model year gasoline powered light duty vehicles and light duty trucks up to eight thousand five hundred pounds (8,500 lbs.) Gross Vehicle Weight Rating (GVWR) are subject to the program. Tables showing the total number of subject vehicles in each county sorted by model year (as of February 2003) are included in Attachment 8a. These figures reflect the actual number of gasoline powered cars, trucks, RVs, and buses under eight thousand five hundred and one pounds (8,501 lbs.) GVWR registered (titled and registered or registered only) in the enhanced I/M area. The total number to be tested is estimated to be 1.3 million. This information is based on the Missouri Department of Revenue (MDOR) records.
- b. Dual-fueled vehicles are required to be tested using their gasoline cycle only and must meet the same test requirements and quality control standards as all subject vehicles. Vehicles with an exchanged engine (an engine not originally designed for the vehicle) are tested according to the emission standards applicable to the model year of the vehicle body. To the extent possible, all pollution control equipment required for the vehicle model year and the original engine must be in place and functional. Vehicles registered as specially constructed are tested using a single speed idle test. Vehicles that cannot safely be transient tested (i.e. short wheel base 4WD vehicles) are tested using a two speed idle test.
- c. The following vehicles are exempt from the inspection requirements of the I/M program (reference subsection 3 of section 643.315, RSMo): (1) Motor vehicles with a manufacturer's GVWR in excess of eight thousand five hundred pounds (8,500 lbs.); (2) Motorcycles and motor tricycles; (3) Model year vehicles prior to 1971; (4) Vehicles which are powered exclusively by electric or hydrogen power or by fuels other than gasoline; (5) Motor vehicles registered in an area subject to the inspection requirements of sections 643.300 to 643.355 which are domiciled and operated exclusively in an area of the state not subject to the inspection requirements of sections 643.300 to 643.355, but only if the owner of such vehicle presents to the department an affidavit that the vehicle will be operated exclusively in an area of the state not subject to the inspection requirements of sections 643.300 to 643.355 for the next twenty-four

months, and the owner applies for and receives a waiver which shall be presented at the time of registration or registration renewal; and (6) New and unused motor vehicles, of model years of the current calendar year and of any calendar year within two years of such calendar year, which have an odometer reading of less than six thousand miles at the time of original sale by a motor vehicle manufacturer or licensed motor vehicle dealer to the first user. Vehicles meeting the above criteria will be identified as exempt by running queries of the MDOR motor vehicle registration database. Tables showing the total number of exempt vehicles in each county in each model year (as of February 2003) are included in Attachment 8b.

2. Basic Test I/M Program
 - a. All 1971 and later model year gasoline powered light duty vehicles and light duty trucks up to eight thousand five hundred pounds (8,500 lbs.) GVWR are subject to the program.
 - b. The following vehicles are exempt from the inspection requirements of the I/M program (reference subsection 2 of section 307.366, RSMo): (1) Motor vehicles with a manufacturer's GVWR in excess of eight thousand five hundred pounds (8,500 lbs.); (2) Motorcycles and motor tricycles; (3) Model year vehicles prior to 1971; (4) School buses; (5) Diesel-powered vehicles; (6) Motor vehicles registered in the area by this section but which are based and operated exclusively in an area of this state not subject to the provisions of this section if the owner of such vehicle presents to the director of revenue a sworn affidavit that the vehicle will be based and operated outside the covered area; and (7) new motor vehicles not previously titled or registered prior to the initial motor vehicle registration or the next succeeding registration which is required by law.
3. MDNR works closely with private and public fleets that operate vehicles in the I/M area to ensure these vehicles are emissions tested. Arrangements have been made for these fleets to provide MDNR with a list of vehicles operated in the area and to update that list on a quarterly basis. All subject vehicles owned by federal, state, and local governmental entities are emissions inspected in accordance with 10 CSR 10-5.380 and 11CSR 50-2.400.

Attachment 8c lists the number of fleet vehicles subject to emissions testing. MDNR continues to explore ways to identify other vehicles operated in but not registered in the I/M area. Strategies used to identify unregistered vehicles operating in the I/M area are listed in Section L.
4. Private and local government fleets are required to be tested at official test-only emission test stations. The contractor gives special consideration to fleets of ten (10) or more vehicles with policies such as special hours and payment vouchers per regulatory and contract language. Some fleets may opt to have I/M testing equipment installed at a fleet testing facility that will be operated and maintained by the contractor at the fleet owner's expense (and connected to the on-line data

system). Mobile IM240 test equipment may also be used at these facilities connected by modem to the on-line computer system. The same test procedures, equivalent equipment, and the same quality control procedures will be used in these fleet facilities as at the official test stations. The same quality assurance procedures will be used to ensure adequate operation of these fleet facilities because the fleet facilities are operated and maintained by the contractor and audited the same as the official test stations. Currently, no fleet has opted for this method.

5. Federal fleet vehicles are required to comply with the same inspection program requirements as other fleet vehicles in the enhanced I/M area. There are approximately fifteen (15) Federal agencies in the State of Missouri I/M area, with a total of approximately two thousand six hundred (2,600) Federal fleet vehicles, including United States military vehicles and United States Postal Service vehicles in the State of Missouri I/M area. As required by EPA guidance, the I/M rule requires that vehicles which are operated on federal installations located within an I/M program area are to comply with the vehicle emissions inspection requirement, regardless of whether the vehicles are registered in the I/M area. This rule applies to all employee-owned and leased vehicles and all vehicles owned by civilian and military personnel on federal installations as well as agency-owned or operated vehicles, except tactical military vehicles. MDNR works cooperatively with all government organizations to ensure that vehicles are emissions tested.

H. Test Procedures and Standards

For 1971 – 1980 model years subject vehicles, the enhanced emissions test consists of a single speed idle test. For 1981 and newer model year subject vehicles, the enhanced emissions test consists of an IM240 transient test, an OBDII fault code check and gas cap integrity test for subject vehicles of model year 1981 and newer. If for defined reasons a 1996 or newer vehicle cannot be OBDII tested or fails the test using OBDII test equipment, then an IM240 transient test is required to be performed. If for technical reasons a vehicle fails an IM240 transient test, then a two (2) speed idle test is required. IM240 test procedures allow for “fast pass” in order to save time, but also allow for an immediate complete retest upon failures that are within two times the emission limit to mitigate false failures. The first IM240 test data is ignored, and the test is treated as a pre-conditioning run. Test procedures are specified in the contract at RFP section 6 and Method of Performance section 10.7.5.g.

The basic inspection used in Franklin County for all 1971 and newer model year subject vehicles is a single speed idle test, an OBDII advisory check for 1996 and newer model year vehicles, and a pollutant(s) cap integrity test for all 1981 and newer model year vehicles.

Upon failure of the emission inspection, vehicle emission components are visually inspected for tampering. After repairs, vehicles must be re-tested and meet the program requirements established for achieving a “Pass” or a “Waiver” regarding the emission test results. The contractor clean screen a large percentage of the subject vehicles. A majority of the subject vehicles are clean screened using Remote Sensing Devices (RSD). A vehicle must be screened on the road as “clean” two (2) times on two different days within a twelve (12) month period

prior to the license plate expiration month and year in order to be exempted from emission inspection station. Sites for placement of the roadside devices follow EPA guidance for placement for parameters such as road grade, single lane traffic, and high likelihood that vehicles are at operating temperature. Requirements are in the contract at RFP 4.10.2 and Method of Performance 10.7.5.o. Remote sensing cutpoints used are established in 10 CSR 10-5.380. Cutpoints are the numeric values of the emission levels used to determine the clean status of a vehicle, as compared to the measured emission test results. The contractor is striving to meet the total exemption goal of forty percent (40%) using a combination of model year exemption (first two model years) and RSD clean screening.

1. The authority to establish I/M test procedures and standards is contained in the enabling legislation in Attachment 1. The test procedures and test standards are specified in the rule in Attachment 2A & 2B.
2. Enhanced Test I/M Program
 - a. All 1971 through 1980 subject vehicles are subject to an idle test. All 1981 and newer subject vehicles are subject to IM240 transient emission testing. All vehicles are subject to an evaporative integrity system test consisting of a pollutant(s) cap test. All 1996 and newer model year subject vehicles were subject to an OBD fault code check on an advisory basis until December 31, 2002. Vehicle test results tied to readings from the OBD system started January 1, 2003. During the OBD phase-in period, vehicles that pass the OBD test are exempt from the IM240 test. Vehicles that fail the OBD test but pass the IM240 test do not have to be repaired this test cycle. Vehicles that fail the OBD and IM240 test must be repaired and re-tested. Commencing January 1, 2005, vehicles shall fail the OBD test if they fail to meet the requirements of 40 CFR 85.2207. The IM240 test includes fast-pass test algorithms. Also, vehicles failing the IM240 test within two times the cutpoints are immediately retested. The retest is to mitigate the false failures due to inadequate engine conditioning (warm up).
 - b. Vehicles subject to the IM240 test must meet the cutpoints set for Hydrocarbons (HC), Carbon Monoxide (CO), and Nitrogen Oxides (NO_x) in order to pass the test. Emission limits, or cutpoints, are stipulated in the rule 10 CSR 10-5.380, including a phase-in set of cutpoints. The phase-in IM240 cutpoints were in effect for the first two (2) years of the enhanced I/M program. Starting February 4, 2002, final IM240 cutpoints were implemented. Those vehicles subject to the single speed or two speed idle tests must meet the cutpoints set for both HC and CO. All vehicles failing any part of the initial test are visually inspected to ensure the presence of all emission control or related equipment (anti-tampering). All vehicles failing any part of the initial test must pass a reinspection and an equipment check after the failing portion of the vehicle's emission control system has been repaired. Vehicles failing an initial tailpipe emissions test for any pollutant must pass a retest for all pollutants in order to receive a certificate of compliance. Vehicles being retested for failure of the

pollutant(s) cap integrity test are also required to pass a tailpipe emissions re-test.

- c. The rule in Attachment 2 and the contract language in Attachment 4 specify that each test station shall have one (1) or more areas where motorists may view the inspections of their vehicles in their entirety. The rule and contract also specify that vehicles shall be rejected for unsafe conditions, including exhaust leaks, fluid leaks, tires with visible cords, or other conditions determined to be unsafe by the contractor or the department.
 - d. Along with start-up and the two year phase-in cutpoints the department began the program with a voluntary testing program which encouraged the public to have their vehicles tested by the enhanced I/M test method before it was mandatory. This is a requirement for the contractor and is detailed in Attachment 4.
3. Basic Test I/M Program
- a. All 1971 and newer subject vehicles are subject to single speed idle testing, as well as evaporative system integrity testing, in the form of a pollutant(s) cap test. All 1996 and newer model year subject vehicles are subject to an advisory OBDII diagnostic code check.
 - b. Those vehicles subject to the single speed idle test must meet the cutpoints set for both HC and CO. All vehicles failing any part of the initial test are visually inspected to ensure the presence of all emission control or related equipment (anti-tampering). All vehicles failing any part of the initial test must pass a reinspection and an equipment check after the failing portion of the vehicle's emission control system has been repaired. Vehicles failing an initial tailpipe emissions test for any pollutant must pass a retest for all pollutants in order to receive a certificate of compliance. Vehicles being retested for failure of the pollutant(s) cap integrity test are required to pass a tailpipe emissions test.
 - c. The rule and contract specify that vehicles shall be rejected for unsafe conditions, including exhaust leaks, fluid leaks, tires with visible cords, or other conditions determined to be unsafe by the contractor or the department.
4. Both inspection programs have a clean screening element. The contractor provides a clean screen program that exempts forty percent (40%) of the subject motor vehicles from the centralized emission test stations. The contractor uses the remote sensing devices to clean screen at least twenty percent (20%) of the subject motor vehicles. Low-emission profiling, remote sensing devices, or model year exemptions may cover the remaining twenty percent (20%). Missouri statute requires that the newest two model years are exempt from any emission inspection requirements. Only motor vehicles of the newest two model years are exempt from the emission inspection fee. The contractor may use one method or a combination of the aforementioned methods to exempt a total of forty percent (40%) of the subject fleet.

I. Test Equipment

This section describes the test equipment that the contractor uses in the I/M stations. The enhanced I/M program primarily uses the IM240 transient test, which means the vehicles are driven on a dynamometer (set of rollers), which could be described as a vehicle treadmill. The vehicle is idled, accelerated, and decelerated during the IM240 test using a protocol per the EPA guidance. The accelerating and decelerating of a motor vehicle simulates real world driving conditions. Vehicles that for technical reasons cannot be tested with IM240 and vehicles in Franklin County are tested with non-transient tests, or tests done without the wheels turning on a dynamometer. The department adheres to the EPA guidance and recommendations for equipment. Contract requirements for equipment are in the RFP section 5 and Facilities section 10.5.1.e.

1. Test equipment specifications, included in the contract, are based on the specifications in the EPA's Title 40, Part 51, Subpart S, Appendix D and the IM240 & Evap Technical Guidance (April 2000), 40 CFR 85.2226 and 85.2227.
2. Enhanced Test I/M Program
 - a. Each test lane is equipped with the following equipment for the IM240: a dynamometer, Constant Volume Sampler (CVS), a flame ionization detector for HC measurement, two (2) Non-Dispersive Infrared (NDIR) analyzers for CO measurements (one (1) low range and one (1) high range), one (1) NDIR analyzer for Carbon Dioxide (CO₂) measurement, and one (1) chemiluminescent analyzer for measuring NO_x. Each lane also has the necessary equipment to safely restrain the vehicle and cool the vehicle engine during the IM240 testing.
 - b. The same test analyzers are capable of being adjusted to basic idle testing specifications in order to conduct the idle test. Each test lane also contains: any equipment necessary to pressurize the pollutant(s) cap and test it for leaks according to the standards stated in 10 CSR 10-5.380 and the equipment necessary to interrogate vehicle OBD systems in all 1996 and newer model year subject motor vehicles.
 - c. All test equipment and processes are automated to the highest degree possible. All computerized equipment has lockout features to prevent tampering by unauthorized personnel. Station managers, or their supervisors, have authorization to clear lock-outs or access the hardware for any purpose other than to perform an emissions test and are required to enter an access code that identifies them personally in order to do so. The date and reason for all lockouts and by whom lockouts are cleared are kept in a data file. Data entry functions associated with the test are streamlined through the use of reference tables and bar coded scanners of Vehicle Identification Numbers (VIN) and other features so that manual data entry is minimized.
 - d. The testing process is almost completely computer controlled. The process begins with data entry, which involves entering the vehicle make, model, model year, license plate number, and three digits of the VIN. The inspector obtains the VIN digits from the vehicle itself and checks the

license plate number as well. The entry calls up a preexisting file based on the registration database and previous inspections on the vehicle. The inspector compares the data in the file and confirms that the vehicle presented matches the VIN/license plate combination in the file. After verification, the inspector takes control of the vehicle. Preconditioning is performed if necessary. Once the equipment is in place, the test is initiated. The test process from that point is completely automatic, including the pass/fail decision and test procedure. Test lanes are linked on a real-time basis to a central computer; test data is recorded onto a central data base at the time a test is completed and multiple initial testing is prevented. Records are kept in the central database for three (3) years before being downloaded for storage. System lockouts are initiated whenever the following quality control checks are failed or not conducted on schedule: periodic calibration or leak checks, CVS flow rate check, dynamometer coast-down, roll speed and roll distance check, inertia weight selection check, and pollutant(s) cap equipment check. All electronic calibration and system integrity checks are performed automatically, i.e., without specific prompting by the inspector prior to each test, and quality control is be under computer control to the greatest extent possible.

2. Basic Test I/M

- a. Each test lane is equipped with the following equipment for the idle test: one (1) detector for HC measurement, two (2) NDIR analyzers for CO measurements (one (1) low range and one (1) high range), and one (1) NDIR analyzer for CO₂ measurement. Each test lane is also equipped with: the equipment necessary to pressurize the pollutant(s) cap and test it for leaks according to the standards to be stated in 11 CSR 50-2.400, and the equipment necessary to interrogate vehicle OBD systems in all 1996 and newer model year subject motor vehicles.
- b. All test equipment and processes are automated to the highest degree possible. All computerized equipment has lockout features to prevent tampering by unauthorized personnel. Station managers, or their supervisors, have authorization to clear lock-outs or access the hardware for any purpose other than to perform an emissions test and are required to enter an access code that identifies them personally in order to do so. The date and reason for all lockouts and by whom lockouts are cleared are kept in a data file. Data entry functions associated with the test are streamlined through the use of reference tables, bar code scanners of VIN, and other features so that manual data entry is minimized.
- c. The testing process is almost completely computer controlled. The process begins with the lane inspector entering the vehicle's license plate in the computer. If information is provided, the inspector verifies the last 4 digits of the vehicle's Vehicle Identification Number (VIN) with the information on the computer screen. If not correct, the lane inspector will enter the VIN from the vehicle. If vehicle information is brought up on the computer screen, the inspector will change any incorrect data, or enter

the last 4 digits of the VIN for a vehicle without a license plate. If there is no vehicle information at all on the computer screen, the lane inspector will enter make, model, model year, vehicle class, gross vehicle weight and engine type and size in the computer. After any of these processes has been completed, the inspector takes control of the vehicle. A test of the gas cap may be demanded if the vehicle is a 1981 or newer. Moving the vehicle to the emission testing area, the appropriate test process as described earlier is initiated and performed. Once the equipment is in place, the test is initiated. The test process from that point is completely automatic, including the pass/fail decision and test procedure. Test lanes are linked on a real-time basis to a central computer; test data are recorded onto a central data base at the time a test is completed and multiple initial testing is prevented. Records are kept in the central database for three years before being downloaded for storage. System lockouts are initiated whenever the following quality control checks are failed or not conducted on schedule: periodic calibration or leak checks and pollutant(s) cap equipment check. All electronic calibration and system integrity checks are performed automatically, i.e., without specific prompting by the inspector prior to each test, and quality control is under computer control to the greatest extent possible.

J. Quality Control

Emission test equipment is calibrated using guidelines set in Title 40, part 51, subpart S. Appendix A and in IM240 Evap Technical Guidance 40 CFR 85.2234 and 85.2235, which is in the RFP in attachment 4. The equipment and other facilities are also maintained on a set schedule, to preclude as much as possible delays, inaccuracies, or inconveniences to the public due to malfunctions.

To assure quality control of equipment and facilities, the department oversees compliance to contract requirements for quality control. The contract, at RFP section 5.6 and at Method of Performance 10.7.5.r., outlines requirements for quality control and maintenance, including weekly and monthly reports.

1. These measures ensure that Missouri meets its commitment to provide motorists with consistent and accurate test results.
2. Attachment 9- Part A contains the manual of quality control and periodic maintenance procedures followed by inspection site personnel to ensure that all equipment is properly calibrated. This manual also includes the calibration and maintenance schedules to be followed at all test sites.
3. Attachment 9- Part B contains the record keeping and document security procedures to be followed at all test sites and other locations involved in the distribution and processing of program documents. Responsible agents are identified and accountability is assessed for each step of the process. Also included is a description of how documents are to be tracked, via control numbers, throughout all phases of the process from initial production, through distribution, issuance, and registration.
3. Attachment 9- Part C contains the specifications to be used for all testing equipment approved for use in the I/M program. These specifications include

minimum durability and functional requirements to ensure accurate measurement, processing, and recording of test samples under a wide range of adverse ambient conditions.

K. Waivers and Compliance Using Diagnostic Inspection

Compliance Waiver 10 CSR 10-5.380(3)(I)1-5: Compliance waivers are issued for motor vehicles that cannot pass the emission inspection, provided a minimum dollar amount was spent for repairs in an effort to lower emissions to within the state limits. Per the contract, RFP section 6.9, repairs are visually checked to verify that repairs were actually done and that they were applicable to the failure.

Repair records must show that repair expenditures were not covered by either a recall or manufacturer warranty and that parts costs and labor costs of recognized technicians total the minimum applicable amount for the model year of the vehicle.

These visual observations of the vehicle and the receipt analysis that lead to a waiver decision is conducted by station management (not by the lane inspectors that conducted the initial or subsequent inspections on the vehicle in question) per the contract at RFP section 6.9.1 and Method of Performance section 10.7.5.g.9.2. Station managers are specially trained on vehicle emission devices and the waivers. State staff may also occasionally issue waivers at either the I/M stations or at the state's quality assurance facility. These occasions would in most cases coincide with motorists' complaints about the contractor's inspection or waiver actions. Because vehicle emission devices vary by make and model, the station managers have lists, or location descriptions, regarding the waiver procedure in either paper form or on computer software.

Out of Area Waiver – 10 CSR 10-5.380(3)(I)6: Out of Area Waivers are issued for motor vehicles that are registered in a city or county in which an emissions inspection is required but the vehicle is operated exclusively out of the area. The vehicle owner must present a completed, signed waiver affidavit to the department that says the motor vehicle will be operated exclusively outside the counties of Jefferson, St. Charles, St. Louis, or the City of St. Louis for at least the next twenty-four (24) consecutive months from the time of registration for which the waiver is issued. The emissions inspection compliance certificate has an indicator showing that the vehicle received an out of area waiver. The vehicle owner is then issued a windshield sticker for the vehicle.

Reciprocity Waiver – 10 CSR 5.380(3)(I)7: The department has not entered into any reciprocity agreements.

1. Enhanced Test I/M Program

- a. A waiver rate of eight percent (8%) of failed vehicles is assumed in the MOBILE modeling that demonstrates that the I/M program meets the applicable performance standard. The State of Missouri maintains a waiver rate that in practice is equal to or lower than eight percent (8%). Auditors and waiver issuance personnel monitor waivers via tracking numbers. If the waiver rate reported in the annual report to EPA is higher than 8%, the State will attempt corrective action to lower the waiver rate. If the waiver rate cannot be lowered to levels committed to in the SIP, or if the State chooses not to implement measures to do so, then the State will revise the I/M emission reduction projections in the SIP and will

implement other program changes needed to ensure the performance standard is met.

- b. The State of Missouri issues waivers only when the requirements of the attached I/M rule and this paragraph are met. In the enhanced I/M area, inspection station management are responsible for issuing waivers. Waiver issuance personnel review repair receipts to verify that a minimum expenditure equal to or greater than \$200 for 1971 through 1980 model year vehicles, \$450 for 1981 and later has been made; verify that only repairs appropriate to the cause of the test failure have been claimed; inspecting the vehicle; and verify the vehicle has shown an improvement in exhaust emissions since the initial test. Waiver issuance personnel will also check the emissions test report for the odometer reading and model year and determine if the vehicle is eligible for warranty repairs, and will require written denial of warranty coverage before issuing a waiver for a vehicle that is eligible for such repairs. Labor costs are not eligible towards the minimum waiver expenditure unless the labor is performed by a recognized repair technician. An official stamp is used to authenticate repair receipts to prevent their reuse. Audit personnel perform oversight of waiver issuance. Oversight measures and procedures for the program have been established by MDNR as part of the Procedures and Specifications Manual (Attachment #9).

2. Basic I/M Program

- a. MDNR has promulgated a rule for a waiver program that is incorporated in the basic I/M program. This is authorized by section 307.366, RSMo (Attachment 1).
- b. The State of Missouri issues waivers only when the requirements of the attached I/M rule and this paragraph are met. In the basic area, inspection station management are responsible for issuing waivers. Waiver issuance personnel review repair receipts to: verify that a minimum expenditure equal to or greater than \$75 for 1971 through 1980 model year vehicles, \$200 for 1981 and later model year vehicles has been made; verify that only repairs appropriate to the cause of the test failure have been claimed; and verify that repairs have actually been made by visually inspecting the vehicle. Waiver issuance personnel check the emissions test report for the odometer reading and model year and determine if the vehicle is eligible for warranty repairs, and require written denial of warranty coverage before issuing a waiver for a vehicle that is eligible for such repairs. Labor costs are not eligible towards the minimum waiver expenditure unless the labor is performed by a qualified or recognized repair technician. An official stamp is used to authenticate repair receipts to prevent their reuse. Audit personnel perform oversight of waiver issuance. Oversight measures and procedures for the program are established by

MDNR as part of the Procedures and Specifications Manual (Attachment #9).

3. The emissions test report for failed vehicles alerts motorists that they should pursue warranty repairs if the vehicle meets the age and mileage criteria. Emission inspectors provide motorists who fail the inspection with a copy of literature explaining warranty coverage. The EPA has published pamphlets explaining the two (2) warranty provisions: (1) performance, and (2) design and defect. The pamphlet "If Your Car Just Failed An Emission Test .. You May Be Entitled To Free Repairs" describes the performance warranty in detail. The pamphlet "What You Should Know About Your Auto Emissions Warranty" describes the design and defect warranty. The performance warranty could require the manufacturer to pay for all repairs necessary to pass the emission test. The design and defect warranty could require the manufacturer to pay for all repairs to primary emission control parts, which are necessary to pass the emission test. Mileage and time constraints apply to both warranty provisions in the Missouri I/M program.

L. Motorist Compliance Enforcement

Owners of vehicles subject to emissions inspections must present documentation of their vehicle passing the emissions inspection or receiving a waiver in order to register their vehicle. In Missouri, registration is required upon purchase of a vehicle and then renewal of the registration is required either annually or biennially. The MDOR requires an original current certificate of emissions inspection no more than sixty (60) days old to register a subject motor vehicle, per the Missouri Driver's Guide and 12 CSR 10-23.170. Hence, the St. Louis ozone nonattainment area method of compliance enforcement for the I/M program is registration denial.

There is no direct penalty to vehicle owners or drivers for not complying with vehicle I/M requirements. Penalties are, however, associated with owning and operating a vehicle without current registration. Law enforcement officers ticket drivers for expired registration, evident by outdated tabs on vehicle license plates. Also, there are late registration penalties assessed when vehicles are registered after their registration has expired.

1. The legal authority in Attachment 1 includes the authority necessary to develop and implement the enforcement element of the I/M program. The procedures governing specific operation of this aspect of the program are contained in Attachment 9, part d). A penalty schedule for violations of these regulations is included.
2. The motorist compliance enforcement of the Missouri I/M program is based on registration denial. Enhanced Emissions inspection frequency is biennial, where half of the vehicle fleet is required to pass the inspection in order to obtain registration renewal each year. For even-numbered registration years, all even-numbered model year subject vehicles must pass the inspection (and odd in odd).

Basic emissions inspection frequency is annual, where all of the vehicle fleet is required to pass the inspection in order to obtain registration renewal each year. The enforcement of this requirement is handled in cooperation with the MDOR license offices in the affected counties. License personnel are prohibited from issuing registration renewals and tag stickers unless an emission inspection certificate of compliance is presented. Verification of exempt vehicle status is coordinated with the MDOR via quality assurance follow-ups. MDNR also requests confirmation of registration changes triggering an exemption. A Memorandum of Understanding (MOU) with MDOR is part of Attachment 3.

3. Enforcement of the requirement that vehicles receive a registration renewal annually is handled by state and local police agencies. If a vehicle owner is cited (ticketed) for an expired registration the owner is assessed a fine, which ranges from \$20 to \$60. Specific fines vary depending on the county the citation was issued in. A separate fine, which ranges from \$20 to \$60, is assessed in the covered counties for failure to display a valid inspection sticker. All remaining I/M program enforcement actions are the responsibility of MDNR. State law provides that any person who violates a requirement of sections 643.300 to 643.355 or a rule promulgated to enforce sections 643.300 to 643.355 shall be guilty of either an infraction, a class C misdemeanor, or a class B misdemeanor (subsections 1-6 of section 643.355, RSMo). State law also provides that any person who violates any procedural requirement of sections 643.300 to 643.355 shall be subject to a fine of not less than \$120 (subsection 7 of section 643.355, RSMo).
4. The State of Missouri maintains the level of motorist enforcement necessary to ensure a compliance rate of no less than ninety-six percent (96%) of subject vehicles. The strategies described above and in Section G will ensure that the enforcement levels improve sufficiently to meet this compliance target. If it is determined as part of the required program evaluation that the I/M program is not meeting the compliance rate committed to, measures will be taken to improve compliance. MDNR uses the I/M program host computer to make a routine comparison between the testing database and the registration database to determine how many vehicles have evaded the emissions test requirement by renewing vehicle registration without receiving a certificate of compliance or waiver. MDNR uses parking lot surveys or roadside pullovers, by cooperating with state and local police agencies, to assess the compliance status of the in-use fleet. MDNR may develop a system to directly cross check the addresses claimed on the driver's license and the vehicle registration to identify illegally unregistered vehicles operating in the I/M area. If non-compliance is found to be significant with this crosscheck, emission reduction credit losses will be addressed.

M. Motorist Compliance Enforcement Program Oversight

Upon receipt of documentation of a vehicle passing the emission inspection or being waived, a motorist must present the documentation to the state license office for registration or registration renewal.

License offices are either operated by the state (called “branch” offices) or are under contract to the state (called “fee” offices). The state agency that operates license offices and oversees the contracted license offices is the MDOR. MDOR has more than one hundred fifty (150) contracted fee offices. The sample contract in Attachment 12 is from St. Louis County and contains standardized text. Fee offices must adhere to all state guidance and rules per contract with the state. Included in Attachment 12 is the guidance document that all branch and fee offices receive regarding registering vehicles subject to the emission inspection requirement. The MDOR contract with the license offices contains procedures that serve to minimize unauthorized activities at the offices and can eventually lead to the termination of contracts. The MDNR has a MOU with MDOR. The MOU stipulates that license clerks (state employees or fee office employees) will verify I/M documents before issuing renewals. If clerks suspect fraudulent documents, no registration or renewal is issued and the offices notify the department. Per statute and MOU with the department, MDOR and/or the Highway Patrol will investigate suspicion of counterfeit documents. The MDOR and/or the Highway Patrol will confiscate suspect documents when possible and apply penalties or bring suit against persons involved in falsification of these I/M documents.

State employees involved in oversight of document handling, or those that handle documents themselves are employed by MDNR, and the MDOR. These employees are subject to standard state or department disciplinary actions for deviation from established requirements. These actions may include notation of deviations in performance appraisals. Less than satisfactory performance appraisals can lead to blockage of promotions, withholding of salary increases or withholding of salary, and eventually can lead to termination.

Contractor employees that deviate from standard requirements are also subject to appropriate penalties. These include requirements to retrain and withhold salary and benefits, and can also ultimately lead to termination.

1. The legal authority for the implementation of the I/M program is included in Attachment 1. This legislation includes the authority necessary to develop and implement the enforcement program oversight element of the I/M program. The procedures establishing specific operation of this aspect of the program are contained in Attachment 9, part e).
2. The MDNR enforcement program is based upon data analysis of the registration and inspection databases to determine how many subject vehicles pass the inspection, are junked, are re-registered in outlying counties, or otherwise disappear from the program. A follow-up survey of exempt vehicles and registration changes triggering an exemption are conducted. Data analysis is also used to confirm that registration renewals are being properly issued at the license offices. Cross checking of the two (2) databases is used to identify any vehicles, which, by any means, obtain registration without complying with the inspection requirement, and to otherwise assess program effectiveness. The data gathered from these procedures is used as a supplement to the biennial program evaluation. If this data does not indicate a compliance rate of ninety six percent (96%), then contingencies for greater compliance enforcement are presented as part of the report.
3. The Procedures and Specifications Manual followed by personnel involved in enforcing and overseeing the I/M program is included in Attachment 9. This

manual details the procedures followed by MDNR and other State personnel and supervisory personnel involved in I/M program enforcement, document handling and processing. In the case of testing stations that issue program documents, a fine equal to no less than the cost of the test fee plus the minimum waiver expenditure is assessed for each such document which is missing or unaccounted for.

Per the MOU, the Missouri State Highway Patrol (MSHP) performs investigations of fraud and document counterfeiting upon request from MDNR. MDNR employs environmental specialists as part of the emissions inspection enforcement program to conduct audits, report compliance and initiate enforcement actions. In addition, the affected motorists are required to present the MDOR branch and fee offices with current emissions inspection certificates of compliance when applying for a registration renewal, transfer, or issuance. Counterfeit certificates will most likely surface at the MDOR license and fee offices. Per the MOU, MDOR personnel copy suspected counterfeit or illegal certificates, turn over the suspected documents to the department and deny the motorist their registration. This is followed by investigations conducted by MDNR and MSHP personnel.

4. The State of Missouri encourages the EPA to conduct periodic audits of the State's I/M enforcement program.

N. Quality Assurance

The contractor must assure the quality of the program per contract requirements. This assurance is accomplished by auditing requirements for equipment, auditing of performance, and auditing of records. The contract requires several reports on test equipment and test performance on weekly, monthly, quarterly and annual schedules. The contract requires that MDNR has a right to request an independent audit by a third party, paid by the contractor but with no corporate or other contractual ties to the contractor. This audit is per contract at RFP 3.2.15 and 10.7.5, and Method of Performance 10.7.5n.

State staff oversees and approve the reports described above. State staff oversees and approves the report of the independent audit as described above. State staff also conduct audits of stations at routine intervals, at least annually per each inspection lane. State staff conduct overt audits of lane equipment and procedures, which include checks to verify that the equipment calibration and preventive maintenance requirements are conducted on schedule.

State staff conduct covert audits. These audits are done using state owned vehicles. The state vehicles used are unmarked, and have plain license plates (not official state vehicle plates). These vehicles are of various makes and a variety of model years. State staff may alter engines or vehicle emission devices in order to cause excessive pollutant emissions from the vehicles. These vehicles are presented to the emission test stations, covertly, for an inspection. Contractor compliance with state rules and contract terms are observed and noted. This includes, but not limited to, notation of properly failing or passing the covert vehicles, notation of equipment accuracy, observance of lane inspector and station management actions and behavior, notation of receipt of proper documentation of the test and any informational materials required by rule or contract.

Improper procedures may violate state statute and rules, or the contract, or in many cases, both. If violations only pertain to state law, enforcement actions and remedies will be those authorized

under sections 643.300 – 643.355 or 307.366 RSMo. If improper procedures are in conflict with the contract, sanctions per contract are applied including liquidated damages detailed at contract RFP section 9.11.

1. The legal authority for the implementation of the I/M program is included in Attachment 1. This legislation includes the authority necessary to develop and implement the quality assurance element of the I/M program. The rules governing specific operation of this aspect of the program are contained in Attachment 2.
2. Quality assurance procedures used by program auditors are included in Attachment 9, part f. Separate procedures are established for conducting overt and covert audits, which include sufficient record keeping requirements to support the imposition of enforcement actions based upon audit findings. All auditors are required to complete formal training.
3. The program will conduct at least two (2) overt audits per year, per test lane. Additional overt activity including activity aimed at suspected problem sites are conducted at MDNR's discretion. Overt audits include a check of document security, record keeping practices, licenses and required display information, observation and written evaluation of each inspector's ability to perform the test procedure, and a quality control evaluation of test equipment. Test records reviewed electronically and by station to flag statistically inconsistent or improbable results occurring either at individual stations or network-wide.
4. The program will conduct at least one (1) covert audit per year, for each I/M station inspector. Additional covert activity including activity aimed at suspected problem sites are conducted at MDNR's discretion. Covert vehicles are sometimes set to fail various aspects of the inspection so as to reflect the full range of technology and malfunction types, based upon procedures established in the Procedures and Specifications Manual in Attachment 9. These procedures require the remote observation of inspection facilities conducting 4,000 or more inspections per year. The program employs at least one covert auditor per four (4) test sites, and rotates these auditors among testing areas to avoid detection. The identity of covert vehicles is concealed from the lane inspector by manipulating the vehicle inspection database maintained by the contractor.
5. Program auditor training is conducted by I/M professional trainers or state audit supervisors. Training of new auditing staff shall consist of at least forty (40) hours of combined training including classroom training, inspection lane training, repair bay training, and on-the-job field training under the direct supervision of at least one (1) audit supervisor. Classroom training emphasizes administrative and enforcement procedures detailed in the auditor manual. Inspection lane and repair bay training emphasizes lane analyzer procedures, covert vehicle repair, and emissions system repair. On-the-job training includes overt and covert auditing fieldwork activities. All program auditors themselves are audited at least once per year by MDNR supervisory personnel.

O. Enforcement Against Contractors, Stations, and Inspectors

Since the I/M program is centralized with one (1) contractor responsible for operations, most enforcement against the contractor, the contractor's stations, and the contractor's employees is

done through provisions of the contract. Most violations for improper testing, improper operation of the program, and other key criteria result in liquidated damages. The compliance criteria and associated penalties are detailed in the contract at RFP 9.11.

1. Liquidated damages are used in the case of systematic violations on the part of the contractor. Additional penalties exist for the contractor for non-compliance with the provisions of the contract. (See Attachment 4)
2. The contractor conducts its own hiring and firing. In addition, the contractor disciplines its employees for procedural and contractual violations independent of the department's efforts. In the case of inspector incompetence discovered by the department, the inspector is required to be retrained and must successfully demonstrate the ability to perform the test procedure prior to the restoration of testing privileges. For cases of inspector violations resulting from factors other than incompetence, the inspector shall be suspended from testing for a minimum of six (6) months, with such suspensions increasing with the severity and frequency of violation, leading ultimately to permanent dismissal. For cases of inspector violations resulting from factors other than incompetence, the inspector shall be suspended from testing for a minimum of six (6) months, with such suspensions increasing with the severity and frequency of violation, leading ultimately to permanent dismissal. Lane inspector retraining requirements are detailed in the contract at Methods of Performance 10.7.5.k.6. A requirement to terminate employees that improperly pass vehicles is in the contract at RFP 9.11.12.
3. MDNR enforcement personnel investigate violations of the I/M rules and statutes. In addition to the enforcement provisions of the statutes, legal authority to enforce the provisions of the I/M program is provided by the Missouri Air Conservation Law. As such, descriptions of administrative and judicial procedures and responsibilities are addressed in the Air Law.
4. The penalty schedule in the operating contract applies for violations of contract provisions. In the case of minor, ongoing violations MDNR may issue a Notice of Deficiency (NOD) to the contractor, inspection facility or contractor employee. The NOD details the nature, time of occurrence, and location of the violation as well as a resolution deadline. Failure to achieve compliance in the time and manner agreed to by both parties will result in MDNR pursuing contractual penalties.

P. Data Collection

1. Attachment 9, part c), contains the equipment specifications that must be met by all I/M testing equipment approved for use in the State of Missouri. The specifications in the contract between MDNR and the contractor provide data collection requirements and record storage format. The information contained within each vehicle test report is such that it is possible to unambiguously tie specific test results to a specific vehicle, test site, test lane, and inspector.
2. The State of Missouri gathers, maintains, summarizes, and reports the results of all inspections, quality control checks performed on testing equipment and I/M documents to the EP on an annual basis as described in Section Q below.

Q. Data Analysis and Reporting

The contract requires data reports for: 1) annual test data annually for the previous calendar year due by July, 2) annual quality assurance for the previous calendar year due by July, 3) annual quality control data for the previous calendar year due by July, 4) annual enforcement for the previous calendar year due by July, 5) biennial report with: a.) changes to the program and b.) weaknesses in the program for the previous two calendar years, due by July. Report descriptions are in RFP section 3. Because the emission I/M program started on April 5, 2000, the first annual reports were due October 5, 2001, and the first biennial report was due October 5, 2002. Subsequent annual reports are due every July 15. Subsequent biennial reports are due every other July 15.

The state analyzes the reports for compliance with state law and contract requirements. State staff also analyzes the data for program effectiveness in reducing emissions from vehicles and adherence to consumer convenience requirements.

1. Beginning with the first full or partial I/M program calendar year and annually thereafter the State of Missouri will report to the EPA summary data based upon program activities taking place from January 1 through December 31 of the previous calendar year. This report provides statistics for the testing program, the quality control program, the quality assurance program, and the enforcement program. The State will address all of the data elements listed in 40 CFR 51.366.
2. Beginning after the first full or partial I/M program calendar year and biennially thereafter the State of Missouri will report to the EPA on all changes made in the program design, funding, personnel levels, procedures, regulations, and legal authority, and shall supply a detailed discussion of the impact of such changes upon the program. This report shall also detail and discuss any weaknesses or problems discovered in the program over the previous two (2) year period, as well as the steps that were taken to address the problems, the result of corrective actions, and any future efforts planned.

R. Inspector Training and Repair Mechanic Training

Inspectors are employees of the contractor. The contract at RFP 3.1.11, 4.4.4, and 4.4.5 requires inspectors to be trained in the test procedures and Missouri requirements by the contractor. The contract at RFP 4.5 and 10.7.5, and Discussions 4.5 requires plans for the training. Contractor station managers are trained on station management skills and on the waiver procedure.

Only inspection services are allowed. Repairs to vehicles at emission test stations or by inspectors are prohibited by statute and the contract (643.310 4. (6) RSMo and RFP 1.6) – Repairs to vehicles that fail the I/M inspections may be done offsite by the owner, by any repair technician, or by a “recognized qualified repair technician.” Only the labor cost of recognized qualified repair technicians count toward the qualifying waiver expenditure. Recognized repair technicians are defined by state rule 10 CSR 10-5.380. Qualified repair technicians are defined by state rule 10 CSR 10-5.375. These technicians are employees of independent businesses, not associated with either the state or the I/M contractor. Training is paid by the technician or his employer and is offered by independent schools or training providers. The department sets criteria and approves courses to meet the requirements of rule definition of recognized repair technicians.

1. The contractor conducts inspector training and certification examinations. The department approves both the inspector training courses and the exam. Inspectors must be re-examined every two (2) years. Inspectors must receive greater than 80 percent (80%) on the exam to conduct inspections per Discussions in Response to the RFP binder 4.5 and Method of Performance binder 10.7.5.k. The curricula includes, but is not limited to:
 - a. General I/M program orientation
 - i. Missouri I/M history
 - ii. Purpose and goal of I/M
 - iii. Contribution of the automobile to air pollution
 - iv. Missouri regulations and laws
 - v. Vehicle emissions and standards
 - b. Station operations and procedures
 - i. State of Missouri I/M staff organization
 - ii. The contractor's staff organization
 - iii. I/M inspection network
 - iv. I/M inspection station organization
 - v. Lane overview
 - vi. Equipment overview
 - c. Customer service, safety, complaint handling, and public relations
 - d. Security of the inspection station
2. Only the inspection station management may issue waivers. Their training includes the passing training requirements for the inspectors and the following additional curricula:
 - a. Station management
 - b. Human resources
 - c. Lane operations
 - d. Customer relations
 - e. Waiver investigation
3. MDNR monitors station management and inspector training. A quality assurance officer on a biennial basis evaluates station management and inspector competence.
4. MDNR worked with community colleges and vocational schools and private training providers in order to ensure adequate repair technician training opportunities existed prior to the beginning of enhanced I/M testing. MDNR promotes, coordinates, monitors, and evaluates the training program for emission repair technicians. Local community colleges and vocational schools provide the setting for repair technician training. MDNR recommends repair technicians meet recognized repair technician requirements included in the rule (Attachment 2).
5. State recognized repair technicians are defined by state rule 10 CSR 10-5.380. A recognized repair technician is any person who:
 - a. Is professionally engaged full-time in vehicle repair or employed by an ongoing business whose purpose is vehicle repair. A Recognized Repair

Technician may only be recognized by the department at one place of employment.

- b. Has valid certifications in National Institute for Automotive Service Excellence (ASE) in Electrical Systems (A6), Engine Performance (A8), and Advanced Engine Performance Specialist (L1) that have not expired.
- c. Has satisfactorily completed a department approved course covering:
 - i. Air quality information – vehicle emissions and ozone formation, St. Louis’ air quality situation, and Federal requirements for ozone reduction
 - ii. The St. Louis area I/M program – overview of I/M program, waivers, forms used in I/M program, and overview of Illinois I/M program
 - iii. Recalls and warranties
 - iv. Repair technician hotlines and informational material
 - v. Inspection station procedures
 - vi. IM240 drive trace analysis and emission failure diagnosing
- d. Has satisfactorily completed at least one (1) four (4)-hour continuing education course per calendar year offered by the department.

S. Public Information and Consumer Protection

The State of Missouri conducts an ongoing public information and consumer protection plan. The plan is comprehensive and includes a substantial minimum expenditure, by year, by the contractor. For details see the contract at RFP section 8 and Methods of Performance 10.7.7. The public information program began six (6) months prior to the start of the program and included information on the upcoming changes in the program, how the consumer will be affected, and the requirements of federal and state law. MDNR works closely with the I/M contractor to ensure the public is informed on an ongoing basis of I/M related issues. The I/M contractor is responsible for developing the public information campaign, subject to MDNR approval. The I/M contractor is required to spend a specific portion of the fees for public information. I/M facilities are required to provide motorists with information regarding how to obtain warranty repairs, components responsible for the test failure to the extent possible, and the results of an ongoing survey of the service provided at local repair facilities. The consumer protection program also assists motorists in obtaining repairs covered under emissions warranty. MDNR follows-up and responds to complaints made by the public and others in the community. Customers may challenge the results of their inspection or report inspector fraud to MDNR. The customer may bring their motor vehicle to the Quality Assurance Facility to have their vehicle re-inspected. The customer will also be given a phone number and form to issue complaints of fraud to MDNR.

Motorists whose vehicles fail are given information on vehicle manufacturers’ warranties, if applicable, by the contractor per the contract at RFP 8.1.4. Since the St. Louis area I/M program is an official local emissions inspection program, recognized by the federal government, vehicle manufacturers’ dealerships must honor warranties based on performance. If a vehicle is within federally set mileage and age limits and the vehicle fails the St. Louis area I/M inspection, warranties must be honored or a written explanation for refusing to honor a warranty must be given.

MDNR has required the contractor to include a whistle blower protection component, designed to keep the names of employees that report violations of the law confidential, within the I/M consumer protection program. The contractor is using the Partners Against Loss (PAL) program and is using an outside and independent agency to provide their employees with twenty-four (24) hour assistance. The agency acts as a liaison between the employee and the contractor. All Missouri State employees are protected from repercussions from reporting deviations from state law within state government. Section 105.055 RSMo provides this “whistleblowers” protection.

T. Improving Repair Effectiveness

As described above, repair technician training is required for state recognized repair technicians. Such training is not provided by the state. Non-profit and for-profit schools and independent trainers provide this training. The department reviews and approves courses per rule definition of recognized repair technician. The department sets criteria for course curricula and an adequate amount of class hours to adequately cover the curricula topics. Curricula include, but are not limited to, the basics of air pollutant formation, training on consequences of emissions from vehicles, overview of federal air quality requirements, review of Missouri I/M statutes and rules, overview of the contractor requirements for vehicle testing, study of the test procedure, introduction to diagnosis of the causes of emission test failures, requirements and responsibilities of being a state recognized repair technician.

Non-profit schools in the St. Louis area include post-high school technical schools and community colleges that offer automotive repair courses for in-service technicians. St. Louis also has at least one (1) for-profit college that offers night courses for in-service technicians. Independent trainers are located in St. Louis or may come from other states to provide training. These include companies that only provide training and textbooks or training materials, companies that also provide repair parts and sales, and companies that also provide repair tools or diagnostic equipment.

1. The State of Missouri meets the technical assistance requirements of 40 CFR Section 51.369(a). MDNR requires the contractor to provide a hot-line service to answer questions from the repair industry. MDNR provides the repair industry with information and assistance related to vehicle inspection diagnosis and repair via a quarterly newsletter. Both the newsletter and the hot-line service are coordinated with the contractor and are funded using the contractor’s portion of the test fee. See the public information language in Attachment 4.
2. The repair effectiveness performance of repair facilities is tracked. The State of Missouri provides the information listed in 40 CFR Section 51.369(b) or alternative information conveying similar information on the ability of repair facilities to provide effective and convenient repair to the public at the time of initial failure. The contractor is required to provide this repair facility effectiveness information, which is tracked by computer compilation of data from completed repair forms, to the motorist. A completed repair form is required as a prerequisite for reinspections and waiver applications.

U. Compliance with Recall Notices

The enhanced I/M rule, included in Attachment 2, requires vehicle owners in the enhanced I/M area to comply with recall notices in order to pass the emissions inspection. Vehicle owners who

have obtained recall repairs but remain on the unresolved recall list can complete the inspection process, if they present a recall repair completion form from the dealership to the inspectors at the contractor's emission test stations.

Contract requirements for outstanding recall checks and requirements for the contractor to maintain a recall database are at RFP 3.3.5 and Method of Performance 10.7.5.g.1.

The State of Missouri has submitted the annual report required by 40 CFR Section 51.370(c).

V. On-road Testing

While the contractor conducts on-road RapidScreen testing for clean screening, the contractor also conducts RapidScreen testing for clean screening to provide information about the performance of in-use vehicles. This on-road testing is required by contract at RFP 3.1.13 and Method of Performance 10.7.5.s.

1. On-road testing is conducted in the I/M program area of the State of Missouri. The legal authority for this testing is contained in the I/M legislation in Attachment 1. The results and conclusions from these tests are presented in the annual reports made available to the public, the legislature, and EPA.
2. The on-road test is conducted via portable on-road analytical equipment measurements of HC, CO, CO₂, and NO_x or other on-road testing. A minimum of 0.5 percent of the vehicle fleet covered by the enhanced I/M program receives a remote sensing test or other on-road test each year.

W. State Implementation Plan Submissions

The following is a schedule implementing the enhanced I/M program in the St. Louis ozone nonattainment area:

- | | | |
|-----|---|---------------|
| 1. | Passage of legal authority | May 13, 1998 |
| 2. | Signature of Governor | Jun. 03, 1998 |
| 3. | Adoption of I/M rule by MACC | Aug. 27, 1999 |
| 4. | Issuance of RFP | Oct. 26, 1998 |
| 5. | Bid conference | Nov. 13, 1998 |
| 6. | RFP bids due | Jan. 07, 1999 |
| 7. | Contract awarded | Feb. 24, 1999 |
| 8. | Complete station construction | Apr. 05, 2000 |
| 9. | Complete inspectors training | Apr. 05, 2000 |
| 10. | Complete station acceptance testing | Apr. 05, 2000 |
| 11. | All I/M program requirements go into effect
(Start of Mandatory Testing) | Apr. 05, 2000 |
| 12. | Phase-in cutpoints take effect | Apr. 05, 2000 |
| 13. | Program cutpoints take effect | Feb. 04, 2002 |
| 14. | 2000 annual reports completed | Jul. 15, 2001 |
| 15. | 2000 - 2001 biennial reports completed | Jul. 15, 2002 |
| 16. | 2002 annual reports completed | Jul. 15, 2003 |

